

# Model FDL 115 | Safety drying chambers for limited quantities of solvent

The BINDER FDL 115 with silicone and dust-free inner chamber, as well as symmetric airflow dries specimens containing solvents and thus this safety drying oven meets all EN 1539 requirements.

## BENEFITS

- Safety concept meets the DIN EN 1539-2010-08 standard
- Short drying time with high temperature accuracy and defined ventilation
- Silicone free and dust-free inner chamber
- Replaceable fresh air cartridges are easy to change and ensure constant fresh air quality



Model 115

## MAIN FEATURES

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Controller with time-segment and real-time programming
- 2 chrome-plated racks
- Fresh-air monitoring with audible and visual alarm and automatic deactivation of heating
- Replaceable filter cartridge, Class M6
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

## ORDERING INFORMATION

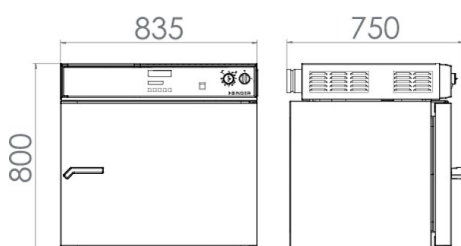
Interior volume [cu.ft.]	Voltage	Option model	Version	Art.-No.
Model FDL 115				
4.1	230 V 1 ph 50/60 Hz	Standard	FDL115-230V	9010-0292

## TECHNICAL DATA

Description	FDL115-230V <sup>1</sup>
Article Number	9010-0292
<b>Performance Data Temperature</b>	
Temperature range 10 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	2.5
Temperature fluctuation [± K]	0.8
Heating-up time to 150 °C [min]	20
Recovery time after 30 seconds door open at 150 °C [min]	12
<b>Air change data</b>	
Air circulation (approx.) [x/min]	20
Volumetric flow rate of exhaust air acc. to EN 1539 at 50 °C [ca. L/min]	400
<b>solvent quantity</b>	
Highest permitted solvent quantity (at T-180 °C, M-100g/mol, U-40g/m <sup>3</sup> , K=0,5) [g]	7
<b>Electrical data</b>	
Rated Voltage [V]	230
Power frequency [Hz]	50/60
Nominal power [kW]	2.9
Phase (Nominal voltage) [ph]	1
<b>Outer dimensions</b>	
Width net [mm]	830
Height net [mm]	805
Depth net [mm]	685
Wall clearance back [mm]	160
Wall clearance sidewise [mm]	100
<b>Internal Dimensions</b>	
Width [mm]	600
Height [mm]	435
Depth [mm]	435
<b>Measures</b>	
Interior volume [L]	115
Net weight of the unit (empty) [kg]	90
permitted load [kg]	60
Load per rack [kg]	30
<b>Environment-specific data</b>	
Energy consumption at 150 °C [Wh/h]	1200
Sound-pressure level [dB(A)]	57
<b>Fixtures</b>	
Number of shelves (std./max.)	2/5

1 All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

## DIMENSIONS incl. fittings and connections [mm]



## OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
	back		
	10 mm	01	8012-1284
	left		
Access port with silicone plug	10 mm	01	8012-1277
	30 mm	01	8012-1360
	right		
	10 mm	01	8012-1270
	30 mm	01	8012-1355
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	–	8012-1117
	for temperature, measurement in center of chamber at specified temperature	–	8012-1136
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	–	8012-1595
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	–	8012-1574
	temperature measurement incl. certificate, 9 measuring points at specified temperature	–	8012-1553
Cart	Cart – stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	–	9051-0018
Coil coating door flap	door flap for coil coating tests	–	8012-0179
Door gasket	made from silicone, resistant to high temperatures for operating temperatures above 200 °C. Note: The gasket wears out more quickly in temperatures above 250 °C	–	8012-0499
Door lock	lockable door handle	–	8012-1248
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	–	8012-1196
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
Rack	chrome plated	–	6004-0003
	stainless steel	–	6004-0008
Rubber pads	set of 4 anti-slip feet, for safe stacking of unit	10	8012-0001
Shelf, perforated	Stainless steel	–	6004-0030
Software	APT-COM™ communications software		
	version 2 to 3, GLP edition	19	9053-0016
	version 3, BASIC edition	19	9053-0014
	version 3, GLP edition	19	9053-0015
	version 3, STANDARD edition	19	9053-0013
	APT-COM™ communications software, price: for free		
	version 3, GLP DEMO Edition	19	9053-0008
Specimen temperature display	with clip temperature sensor and 4–20 mA analog output (e.g., for chart recorder connection), accessible via 6-pin DIN socket	–	8012-0602

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
Data Logger Kit installation service	unit function instructions for operation and programming of the controller	18	DL10-0500
Installation	and set up of unit at operating location, connect to existing connections	13, 18	DL10-0100
<b>Preventive maintenance</b>			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL20-0300
<b>Calibration services</b>			
Calibration temperature incl. certificate	including certificate, one measuring point in center of chamber at specified temperature	14, 16, 17, 18	DL30-0101
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	14, 16, 17, 18	DL33-0000
Temperature measurement 18 measuring points	including certificate, 18 measuring points at specified temperature	14, 16, 17, 18	DL30-0118

\* Notes › See last page

Designation	Description	*	Art.-No.
Temperature measurement 27 measuring points	including certificate, 27 measuring points at specified temperature	14, 16, 17, 18	DL30-0127
Temperature measurement 9 measuring points	including certificate, 9 measuring points at specified temperature	14, 16, 17, 18	DL30-0109
<b>Validation services</b>			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL40-0100
Execution of IQ/OQ/PQ	in accordance with customer's requirement, price: on request	15, 18	DL44-0500
Qualification folder IQ/OQ	supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, QM certificate in accordance with ISO 9001	15, 18, 20	8012-0857
Qualification folder IQ/OQ/PQ	supporting documents for validation performed by customer, in accordance with customer's requirement, extension of Qualification folder IQ/OQ by chapter PQ	15, 18	8012-0946
<b>Warranty service</b>			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL00-6041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL00-6042

\* Notes › See last page

## NOTES

- 01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 02 UL mark is not granted when this option is used.
- 03 Heat resistant only to max. 200 °C.
- 04 Only available on units rated for 230 V.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 07 The additional heat input may affect the temperature behavior.
- 09 Not in conjunction with the optional access port, door with window and interior lighting.
- 10 Not available on 23-liter units.
- 11 Not available on 23- or 53-liter units.
- 12 Only available on units rated for 230 V or 400 V.
- 13 Installation and connections take place at unit location; transport within the company only upon consultation.
- 14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
- 15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
- 16 Sensor calibration is performed in an accredited calibration laboratory.
- 17 Calibration is performed according to the BINDER factory standard.
- 18 Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).
- 19 For additional accessories, refer to the Process documentation chapter.
- 20 When ordering IQ/OQ qualification folders and associated IQ/OQ execution on one order, we offer a 15 % discount for both items.  
When ordering IQ/OQ/PQ qualification folders and associated IQ/OQ/PQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ/PQ folder.